

ABSTRACT

[Abstract of the Disclosure]

5 Provided are a method for manufacturing a high k-dielectric oxide film, a
capacitor having a dielectric film formed using the method, and a method for
manufacturing the capacitor. A high k-dielectric oxide film is manufactured by (a)
loading a semiconductor substrate in an ALD apparatus, (b) depositing a reaction
material having a predetermined composition rate of a first element and a second
10 element on the semiconductor substrate, and (c) forming a first high k-dielectric oxide
film having the two elements on the semiconductor substrate by oxidizing the reaction
material such that the first element and the second element are simultaneously oxidized.
In this method, the size of an apparatus is reduced, productivity is enhanced, and
manufacturing costs are lowered. Further, the high k-dielectric oxide film exhibits high
dielectric constant and low leakage current and trap density. Thus, a capacitor
15 including the high k-dielectric oxide film as a dielectric film also exhibits low leakage
current and trap density.

[Representative Drawing]

FIG. 4